

**ABSTRACT**

In an antenna diversity environment, the timing offset of the receiver's fingers are based on the timing offset of the received peaks of the base station transmit signals. In a system with non-negligible multipath spacing, the timing offset of the received peaks of the base station transmit signals are not necessarily at the same location. In one embodiment, the demodulating elements for the signal from each base station antenna use the same offset for demodulating and determining an error signal based on pilot signal sampling prior to the timing offset and subsequent to the timing offset. The error signals are averaged and used by a time tracking loop to track the incoming signal. In another embodiment, the demodulating elements for the signal from each base station antenna independently time track the signals with different timing offsets for each finger. The preferred embodiment depends on the method used by the base station to multiplex the data onto multiple transmit antennas.